

# PATENT SPECIFICATION

567.520



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## COMPLETE SPECIFICATION

### Improvements relating to a Reflecting Appliance for providing Visual Aid

I, WILLIAM JOHN PHILLIPS, a British subject, of 7A, Victoria Mansions, Cuthbert Street, Edgware Road, London, W.2, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The invention is intended to provide in a convenient form appliances enabling the user, for example, a paraplegic patient, when lying in a supine position to observe objects situated in a field beyond the visual range of the patient.

The invention provides an appliance in the form of two plane reflecting surfaces, inclined at a suitable angle to each other and means for supporting them with the intersecting line of their planes substantially horizontal above the patient's head in such a position that rays of light proceeding from an object towards the first mirror are reflected into a new direction and towards the second mirror, where the rays are again reflected into a second new direction to the eye of the viewer. The angle of inclination between the reflectors may be varied to suit the position of the object to be viewed relative to the line of vision of the patient.

The reflectors may be held in the required position above the patients forehead by means of a framework arranged to stand vertically at the side of the patients bed. By using two reflectors the reversed image produced by reflection at the first surface, is again reversed by its reflection at the second surface producing a laterally non-reversed and erect image at a position considerably elevated from the reflected object.

Other parts of the invention are embodied in the specific form of appliance which, in order that the invention may be clearly understood it is now proposed to described by way of example with reference to the accompanying drawings in which:—

Fig. 1 is a perspective view of the complete appliance.

Fig. 2 is a section of the reflectors on the line X—X of Figure 1.

Fig. 3 is a diagrammatic side elevation

of part of the appliance showing the path of rays of light, and position of the final image.

Fig. 4 is a similar elevation of the appliance as in Fig. 3 but showing an alternative position of the reflectors and a varied position of the final image.

(Fig. 1). The appliance comprises two plane reflecting surfaces MM and M2 M2 which are inclined at an angle towards each other. The reflectors are connected at their ends to two slotted bars (5) by means of a set screw fixed to each of the reflector ends and passed through the bars, locking securely at (2). By loosening the set screws the reflectors will rotate about the connecting points, thus giving a variable angle of inclination between the two reflecting surfaces.

The two bars 5 are identically slotted (3) along their length, in such a manner as to allow the distance of separation between the two reflectors to be increased or decreased as may be required in the use of the appliance, by sliding the two set screws at the reflector ends into an alternative pair of slots along the bars. Situated at the centre of each of these slotted bars and projecting perpendicularly to the side opposite to the reflectors is a set screw (4) which is passed through the small horizontal tubes (6) forming part of the suspending framework and are made fast by thumb-nuts (7). By loosening these set screws the bars (5) will rotate about their centre (4) effecting a bodily movement of the two reflectors.

For convenience the suspending framework is situated on a mobile base (1) in order that the appliance may be wheeled to and from the users bedside at will. A vertical tube (10) rises from this base to a suitable height. Telescoped and rising out of the tube is the overhanging bar (8) which is shaped to extend horizontally across the width of the patients bed. From this bar two small bars (11) are extended vertically downwards connecting at their ends with the two small horizontal tubes (6) which carry the slotted bars.

The height of the reflectors may be adjusted by means of a set screw situated at the neck of the vertical tube (9) rising

from the base, thus securing the overhanging bar telescoping in the tube at this point, at whatever height may be desired.

- 5 In the use for which the appliance is normally intended, the viewer lies in a completely supine position with the eyes directed towards the ceiling. The appliance is situated in the required position approximately above the forehead.
- 10 Fig. 3 shows the reflectors in a suitable position for use by a person lying in a supine position.

- 15 Rays proceeding from an object AB towards the first reflector MM, are reflected into a new direction AR BR, and towards the second reflector M2 M2 where they are again reflected into a second new direction AR2 BR2 and pass
- 20 to the eye of the viewer, indicated at E.

- 25 An erect, equal sized image is produced at A<sup>1</sup> B<sup>1</sup>. The elevation of this image from the object is dependant upon the relative position of the two reflectors and their distance apart. Fig. 4 shows an alternative position of the reflectors and elevation of the final image.

- 30 When the appliance is required for use in strong light, tinted reflectors may be used to prevent glare, or alternatively coloured filters may be attached to the reflecting surfaces.

- 35 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An appliance for enabling objects to be viewed by a person in a supine position

when situated at a considerable angle from the direct line of vision of the viewer, comprising two plane reflectors held above the viewers eyes, with the intersecting line of their planes substantially horizontal, by means of an overhanging framework, whereby rays proceeding from objects to be viewed are reflected to the eyes of the viewer.

2. Appliances as claimed in claim 1 wherein means are provided for adjusting the angle subtended between the two reflecting surfaces.

3. Appliances as claimed in either of the preceding claims wherein means is provided for adjusting the distance of separation between the two reflecting surfaces.

4. Appliances as claimed in any of the preceding claims wherein means is provided for adjusting bodily the position of the reflector assembly with relation to the eyes of the viewers.

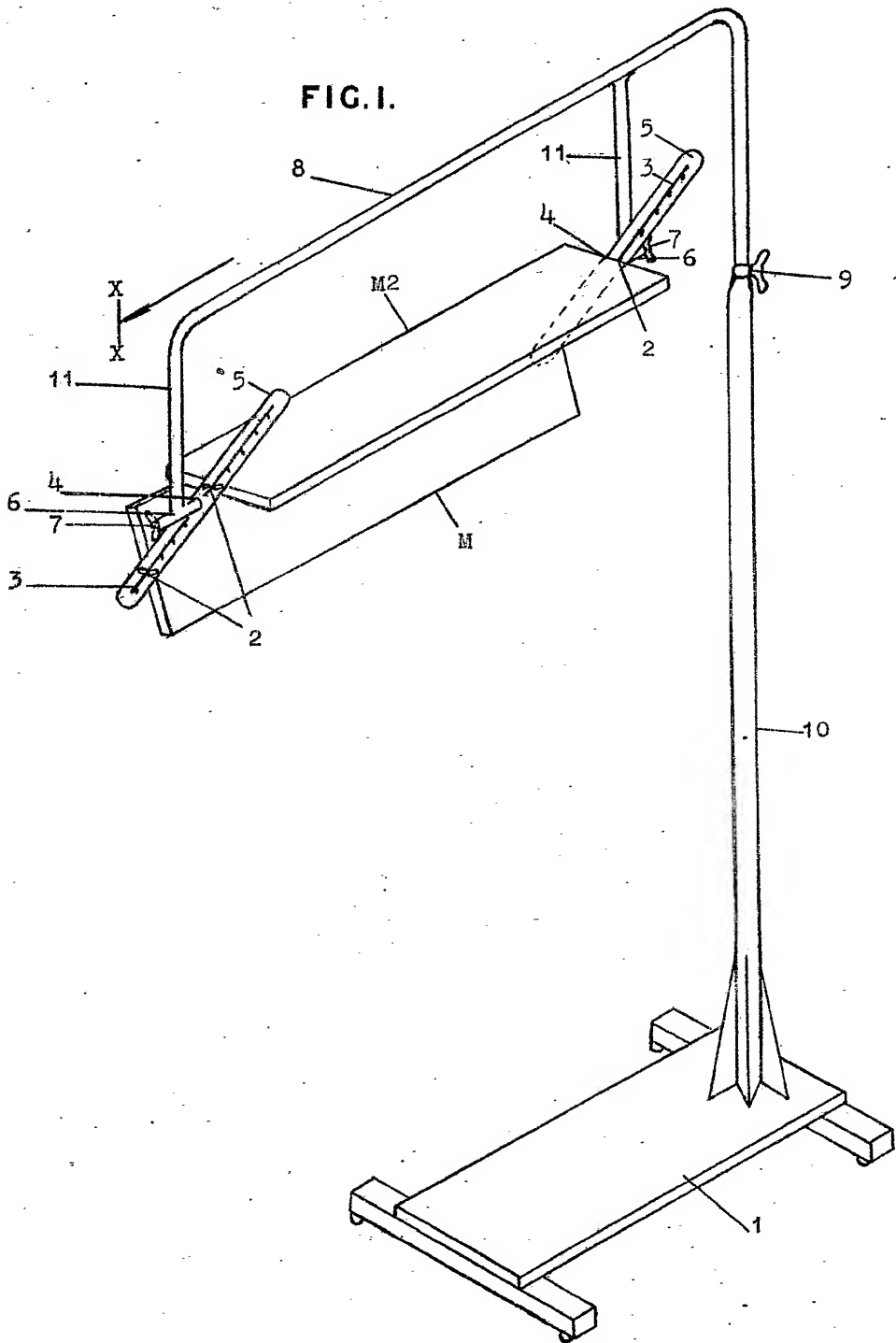
5. Appliances as claimed in any of the preceding claims wherein means is provided for adjusting the height of the reflectors.

6. Appliances as claimed in any of the preceding claims wherein the supporting framework is carried on a base supported on wheels.

7. An appliance for enabling objects to be viewed when situated at a considerable angle from the direct line of vision of the user substantially as described with reference to the accompanying drawings.

Dated the 21st day of August, 1944.  
W. J. PHILLIPS.

[This Drawing is a reproduction of the Original on a reduced scale.]



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FIG. 2.

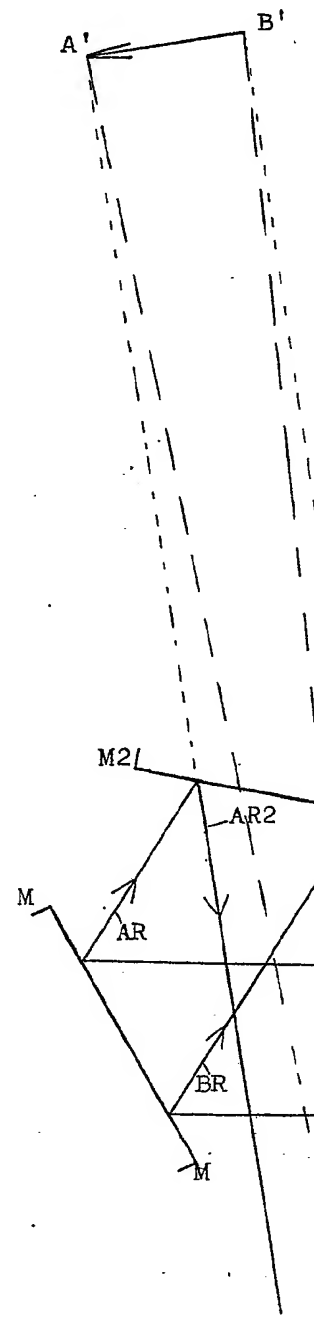
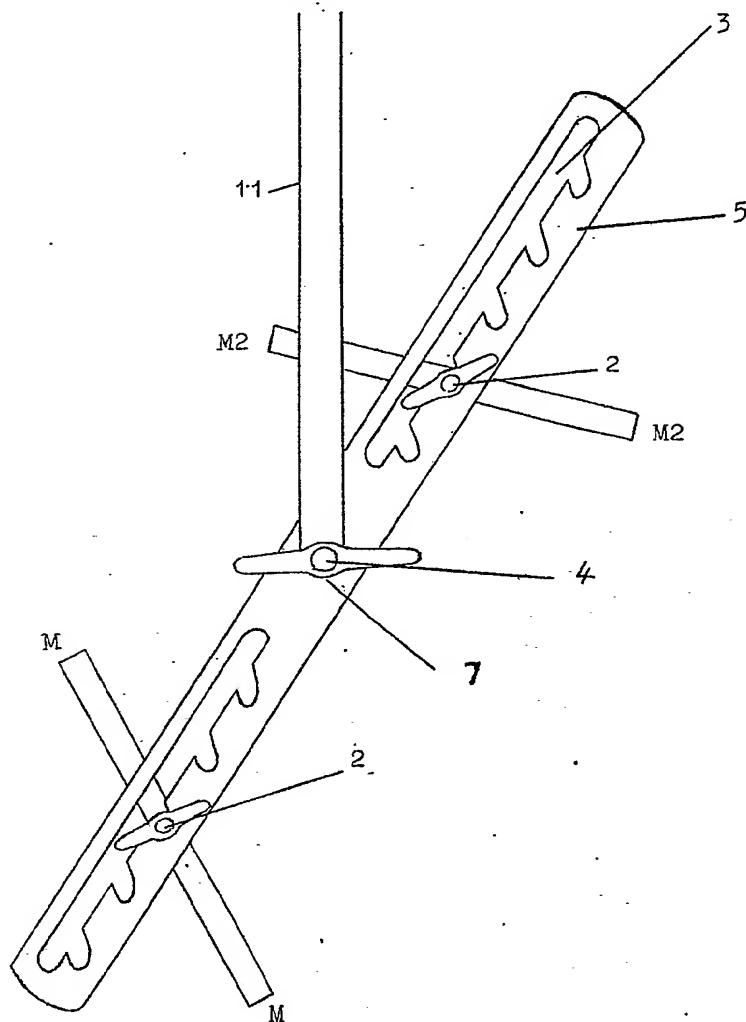


FIG. 3.

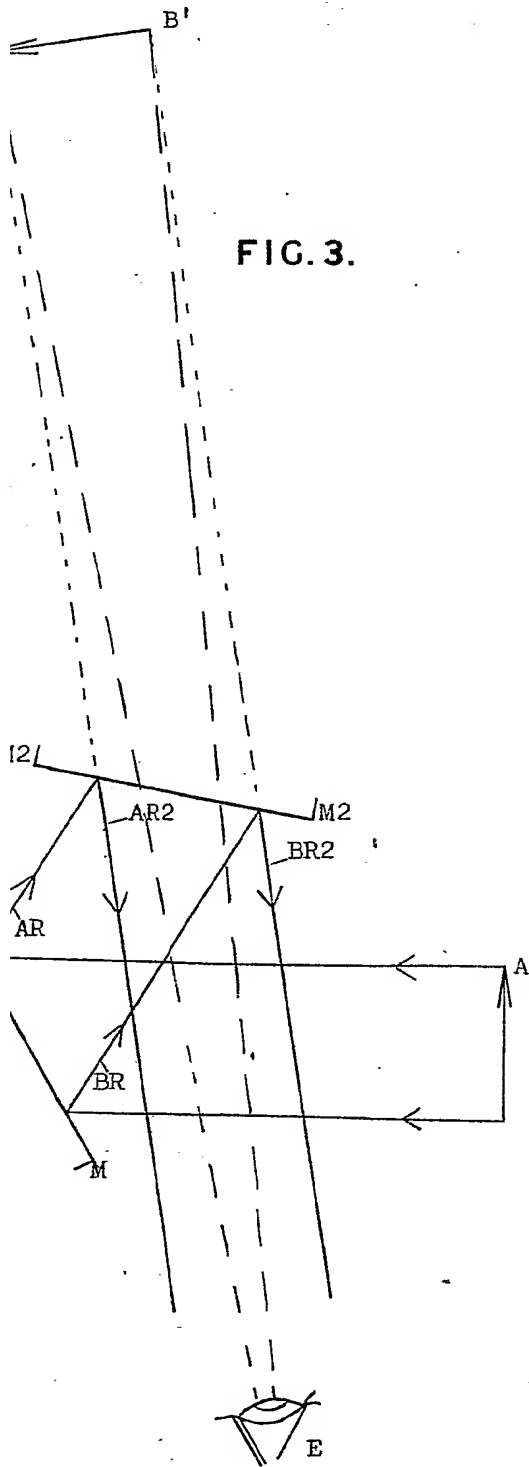


FIG. 4.

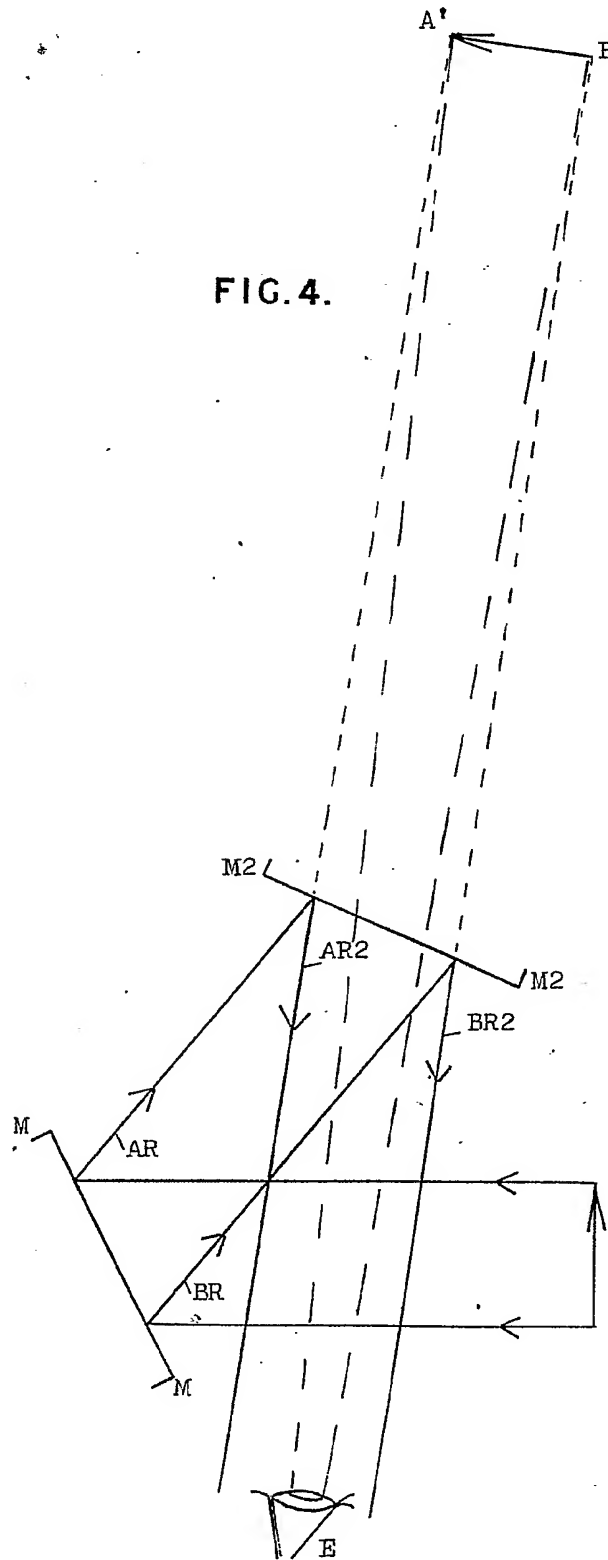


FIG. 2.

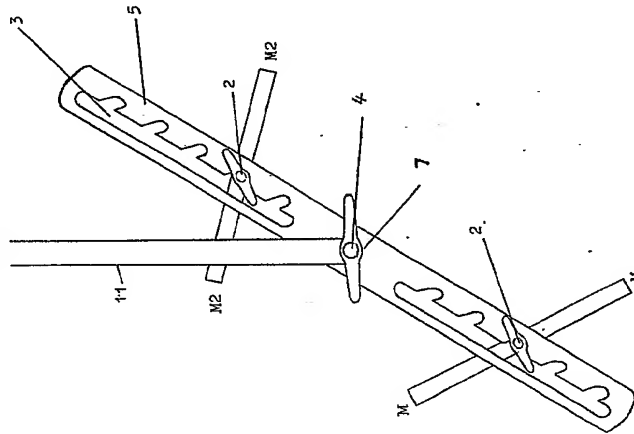


FIG. 3.

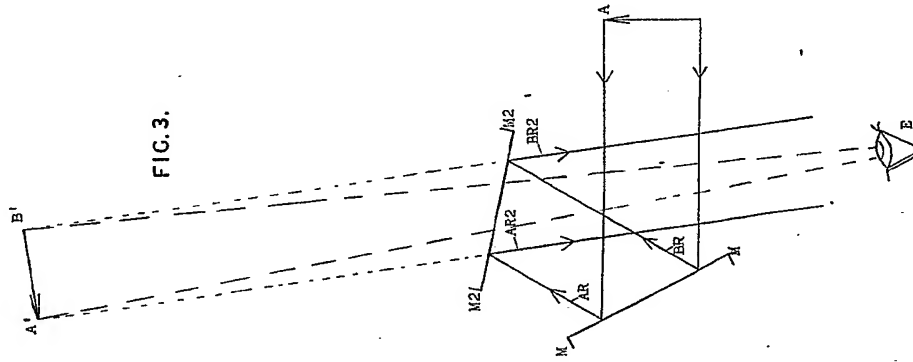


FIG. 4.

